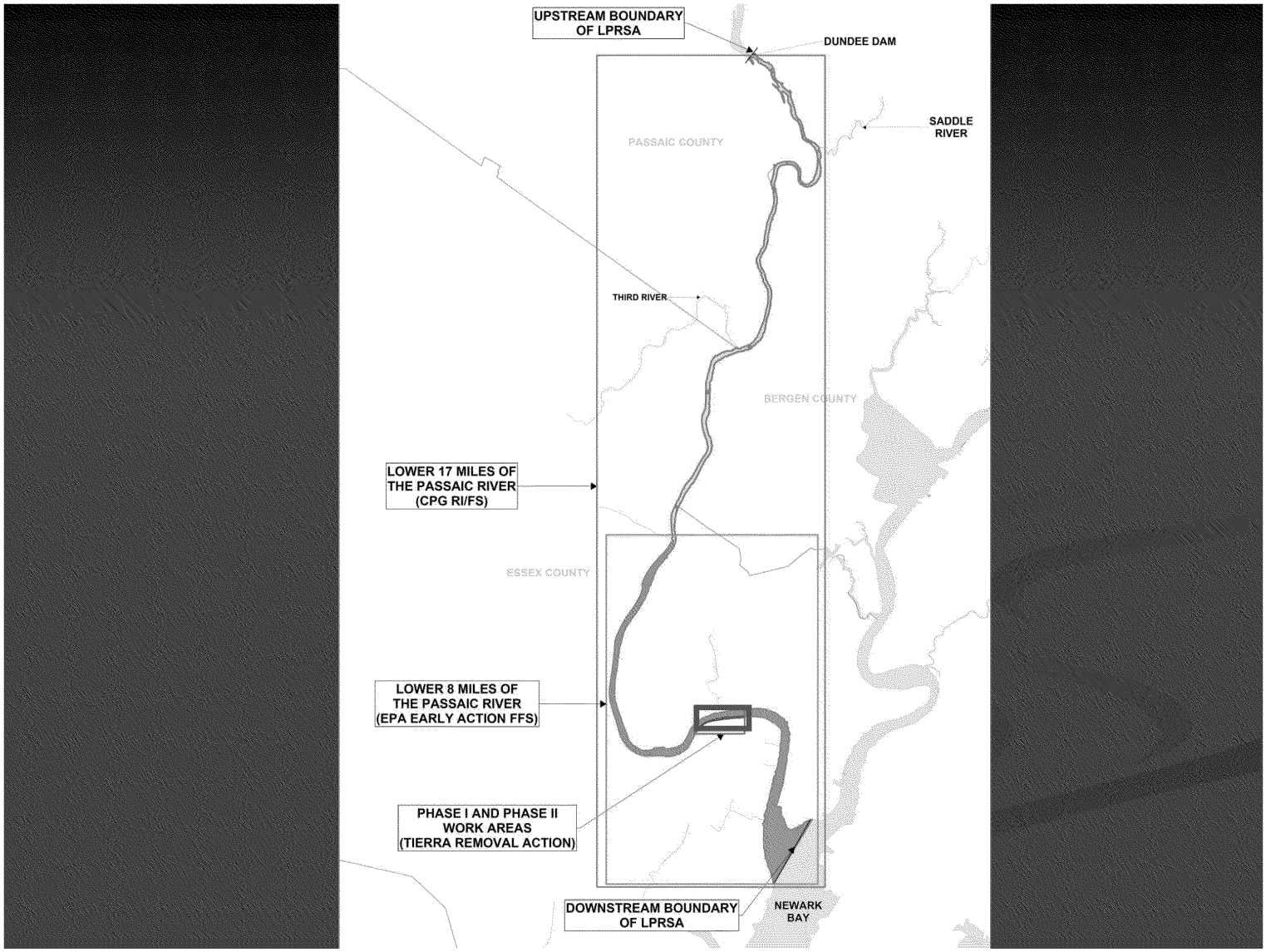
Passaic River Lower 8 Miles

Focused Feasibility Study Alternatives

February 8, 2011


UPSTREAM BOUNDARY OF LPRSA
DUNDEE DAM
SADDLE RIVER
PASSAIC COUNTY
THIRD RIVER
BERGEN COUNTY
LOWER 17 MILES OF THE PASSAIC RIVER (CPG RI/FS)
ESSEX COUNTY
LOWER 8 MILES OF THE PASSAIC RIVER (EPA EARLY ACTION FFS)
PHASE I AND PHASE II WORK AREAS (TIERRA REMOVAL ACTION)
DOWNSTREAM BOUNDARY OF LPRSA
NEWARK BAY

Lower 8 Mile Action Overview

Focused Feasibility Study (FFS) develops alternatives & evaluates them against 9 criteria

Proposed Plan lays out a preferred alternative for public comment

After response to comments, Record of Decision chooses one alternative

Focused Feasibility Study (FFS)

Scope of alternatives is 8 miles, bank-to-bank.

FFS evaluates 3 alternatives

- No Action
- Deep Dredging
- Capping with Some Dredging

Active alternatives have 3 disposal options

- Off-site disposal
- CAD in Newark Bay
- Local decontamination & beneficial use

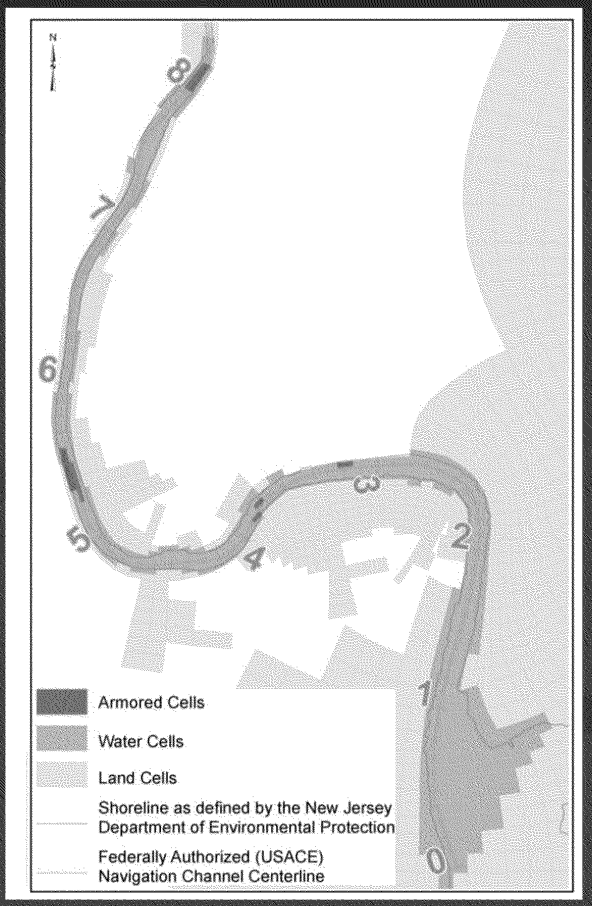
Deep Dredging with Backfill

- Remove all fine silts in lower 8 miles using:
  - Mechanical dredging; or
  - Hydraulic dredging
- Backfill
  - Two feet of sand to minimize residuals
  - No maintenance required
- Monitored natural recovery

Capping with Some Dredging

(1 of 2)

- Dredge some depth of silt to:
  - Prevent additional flooding
  - Allow for navigation channel
- Engineered Cap over lower 8 miles:
  - Two feet of sand everywhere
  - Another two feet of stone (armor) in some places
  - Maintenance in the future
- Monitored natural recovery



(2 of 2)

Capping with Some Dredging

Navigation Channel

River Mile	Authorized Depth [ft]	Current Depth [ft]		Proposed Depth [ft] in Capping Alternative
		Controlling	Average	
0.0-1.2	30	14	19	30
1.2-2.6	30	4	15	RM 1.2-1.7 = 25 RM 1.7-2.2 = 20 RM 2.2-2.6 = none *
2.6-4.6	20	4	12	none *
4.6-7.1	16	7	13	none *
7.1-8.1	16	8.7	12.6	none *

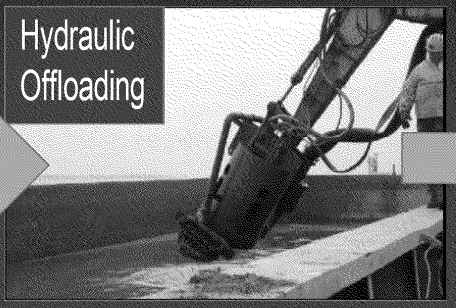
* No maintained channel. Cap will be at current depth or minimum 10ft.

Disposal Option: Off-Site

Dredge

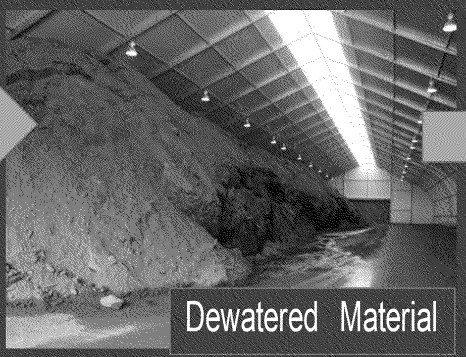
Barge Transport

Hydraulic Offloading



Courtesy of John Henningson, Henningson Environmental Services, Inc.

Mechanical Presses



Dewatered Material

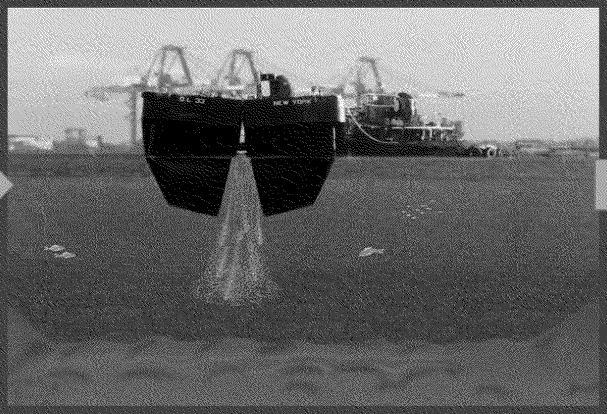
Off-site Disposal

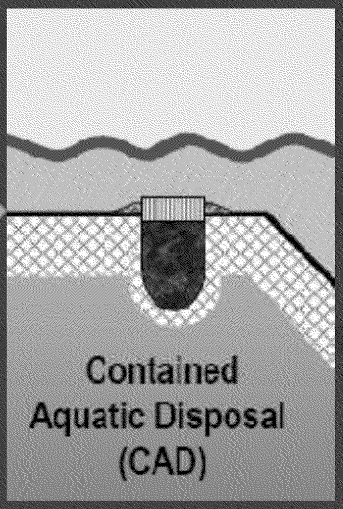
http://www.christmas-shopping.com.au/thomas-and-friends-gordon.html

Water Treatment Plant

Disposal Option: CAD in Newark Bay

(1 of 2)





Disposal Option: CAD in Newark Bay

(2 of 2)

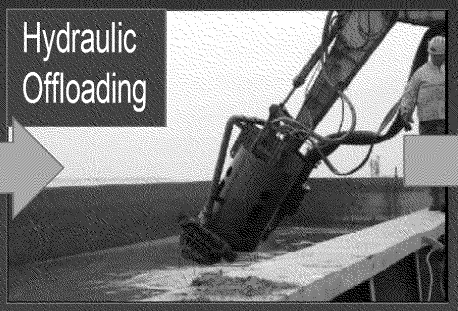
Disposal Option: Local Decontamination

(1 of 2)

Dredge

Barge Transport

Hydraulic Offloading

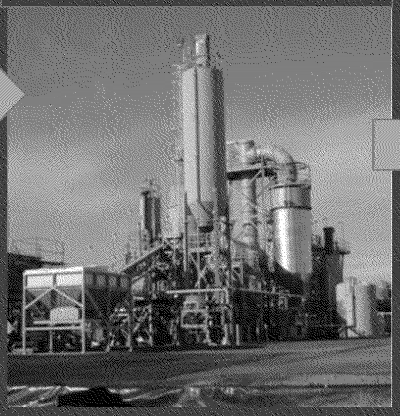


Courtesy of John Henningsen, Henningson Environmental Services, Inc.

Mechanical Presses

Water Treatment Plant

Local Thermal Treatment



Beneficial Use

(2 of 2)

Disposal Option: Local Decontamination

- Thermal treatment
  - Pilot: Endesco Cement-Lock
  - Beneficial end-product: material to make cement
- Sediment washing
  - Pilot: Biogenesis
  - Beneficial end-product: material to make topsoil

A Start to Comparing Alternatives

	Volume Dredged	Years of Dredging/ Capping	Nav. Channel	Resus-pension (dredging)	Long Term	Cost
No Action	0	N/ A	No change	No change	N/ A	N/ A
Deep Dredging	11 mil cubic yds	7 yrs	Restore to Authorized	6 times current	Monitoring	$1.3-3.0 billion
Capping with Some Dredging	4.2 mil cubic yds	5 yrs	Partially restore in lower 2 mi	2 times current	Monitoring & Maintenance	$0.8-1.5 billion

ADD MORE COLUMNS AS DISCUSSION PROGRESSES…

A Start to Comparing Disposal Options

	Upland Acres Needed	Subaqueous Acres Needed	Transport-ation	Local Air Emissions	Water Quality Impact
Off-Site	Dredging=50 acres for 9 yrs	None	Trucks and trains	Impact from transport	Minimal?
	Capping=30 acres for 7 yrs				
CAD	None	Dredging=200 acres for 9 yrs	None	Minimal	Being Evaluated
		Capping=80 acres for 7 yrs			
Local Decon.	Dredging=70 acres for 9 yrs	None	Trucks and trains for end-product	Impact from thermal & transport	Minimal?
	Capping=40 acres for 7 yrs				

ADD MORE COLUMNS AS DISCUSSION PROGRESSES…

FFS Evaluation Against Nine Criteria

Overall protection of human health & the environment

Compliance with ARARs

Threshold

- Long-term effectiveness & permanence
- Reduction of toxicity, mobility, volume through treatment
- Short-term effectiveness
- Implementability
- Cost

Balancing

State Acceptance

Community Acceptance

Modifying
(after Proposed Plan)

Schedule

Winter 2010-11:

- Finish technical work
- Consult with Stakeholders

Spring 2011:

- Reviews by EPA national groups

Summer-Fall 2011:

- Final Focused Feasibility Study
- Proposed Plan for 60 day public comment period

Action Items (1 of 2)

- Post presentation on web site
- Add column to table for jobs created
- Provide information on # jobs created at other Superfund sites.
- EPA needs to brief elected officials: mayor & city council
  - Newark/ Kearny/ Harrison/ Jersey City/ Bayonne/ others
- Consider draft bill on front of Newark City Council on rezoning river front.
- Need to reach out to NYSDEC trustee related to CAD as one disposal option.

Action Items (2 of 2)

- Consider environmental justice and cumulative impacts in calculations of risks & costs.
- What contamination will be at surface after dredging is done for capping alternative?
- Develop cost analysis that includes actions in perpetuity.
- Look at disposal options around country and internationally beyond what has already been identified.

Questions

- Are there other dioxin contaminated tidal rivers in country? How are they being cleaned up?
- Provide locations of off-site disposal facilities.
- How will contaminated materials that come out of CAD (to construct it) be managed? Need on-land storage for it?
- How will thermal decon technology deal with metals?
- Are resuspension estimates for mechanical or hydraulic dredging?